R E P O R T  R E S U M E S

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AN ATTEMPT TO SECURE ADDITIONAL EVIDENCE CONCERNING FACTORS AFFECTING LEARNING TO READ.

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A COMPARISON WAS MADE OF FOUR DIFFERENT METHODS OF TEACHING BEGINNING READING. THE PROGRAMS STUDIED WERE (1) AN ECLECTIC, "WHOLE WORD" READING PROGRAM PRESENTED IN SCOTT, FORESMAN PUBLICATIONS, (2) A "PHONIC" READING PROGRAM PUBLISHED BY J.B. LIPPINCOTT, (3) A COMBINATION ECLECTIC, "WHOLE WORD - PHONIC" READING PROGRAM PRESENTED BY SCOTT, FORESMAN MATERIALS SUPPLEMENTED BY AMERICAN EDUCATION PUBLICATIONS' 1964 EDITION OF "PHONICS AND WORD POWER," AND (4) A LANGUAGE ARTS APPROACH WHICH USES THE INITIAL TEACHING ALPHABET IN THE MATERIALS OF ITA PUBLICATIONS. EACH READING PROGRAM WAS USED IN FIVE FIRST-GRADE CLASSES. INTELLIGENCE TESTS, READING READINESS TESTS, AND READING ACHIEVEMENT TESTS WERE USED TO EVALUATE READING SKILLS OF THE STUDENTS. THE CONCLUSIONS DRAWN WERE REGARDED AS TENTATIVE AND FURTHER RESEARCH WAS RECOMMENDED. HOWEVER, RESULTS INDICATED THAT ITA, "PHONICS AND WORD POWER," AND LIPPINCOTT GAVE STUDENTS A FASTER START IN SOME READING AND SPELLING SKILLS, BUT THESE DIFFERENCES DIMINISHED FARTHER ALONG IN THE STUDY. EFFECTIVENESS OF THE READING PROGRAMS ALSO VARIED WITH ABILITY LEVELS OF THE STUDENTS. PUPIL ACHIEVEMENT WAS FOUND TO BE INFLUENCED BY (1) THE EDUCATIONAL LEVEL OF THE PARENTS, (2) THE NUMBER OF BOOKS AND MAGAZINES IN THE HOME, AND (3) ABOVE AVERAGE TEACHERS. (AL)

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TITLE

# Cooperative Research Project Number 2697

# "An Attempt to Secure Additional Evidence Concerning Factors Affecting Learning to Read"

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## THE PROBLEM

Reading is the foundation of the school curriculum. Mastery of reading skills proportionate to an individual's ability is crucial for successful achievement at every grade level. As Durrell notes, "Success in initial classroom instruction is more important than providing remedy after failure. This is particularly true in learning to read since reading is the essential base for later school development."[1]

The proper acquisition of reading skills to develop each individual to his maximum is important to the nation and its economy. Study after study has shown the average school dropout is retarded two or more years in reading ability.[2] In early 1965, in his educational message to Congress, President Johnson said, "Poverty has many roots, but its taproot is ignorance."[3] A corollary to his statement might be, "Educational success has many roots, but its taproot is reading."

Notwithstanding considerable research on teaching beginning reading, the findings have been equivocal, contradictory, and confusing. Gray has written, "The results of research do not indicate conclusively which of the various methods now in use is the best."[4]

Which method of teaching beginning reading is best for which children? Methods are being revised continually and "new" reading methods added which compound selection problems for educators. This study attempted to secure additional evidence concerning some of the plaguing, controversial beginning reading questions.

## OBJECTIVES

This research attempted to refine, extend, and strengthen knowledge of beginning reading by comparing methods and materials of four separate educational publishers: Scott, Foresman; Lippincott; American Educational Publishers; and i/t/a.

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[1]Donald D. Durrell, "First Grade Reading Success Story: A Summary," Journal of Education, 14 (February 1958), 2.

[2]Daniel Schreiber, "The School Dropout-Fugitive from Failure," The Bulletin of the National Association of Secondary School Principals, 46, (May 1962), 236.

[3]President Lyndon Johnson, "Message on Education to 89th Congress," February 1965.

[4]William S. Gray, "The Teaching of Reading," Charles W. Harris, ed., Encyclopedia of Educational Research, (New York: The Macmillan Company, Third Edition 1960), 1122.

It was limited to the following:

1. Which of several methods of teaching beginning reading produces significant differences in reading achievement?

2. Which of several methods of teaching beginning reading results in significant differences in student attitude toward reading?

3. Which of several methods of teaching beginning reading is best for children of different ability levels?

4. What are the teaching characteristics of primary teachers whose students learn to read with above average success in relation to their native ability?

5. What are the teaching characteristics of primary teachers whose students consider reading as their favorite subject?

6. What is the influence of the home on learning to read?

   a. What is the relationship between educational level of parents and reading success?

   b. What is the relationship between frequency of parental reading to their children and reading success?

   c. What is the relationship between the number of books in the home and reading success?

## RELATED RESEARCH

Research closely related to this investigation may be divided into these categories: A. Whole word vs. phonic methods; B. Student attitude; C. Home Influence.

### Whole Word Vs. Phonics Methods

In a strict sense there are no pure "whole word" or "phonic" reading methods. In this discussion the term "whole word" will refer to the method of reading instruction which begins with the introduction of sight words before any analytic word attack skills are taught utilizing basal reading materials. The term "phonics" will refer to those reading methods which are heavily laced with word analysis skills, chiefly phonic letter-sound relationships, which are then blended together for pronunciation of words.

Advocates of either the whole word or phonics systems can point to evidence which seems to prove their respective position. For example, Greenman[5] and Bear[6] found a significant difference in achievement at the first grade level in favor of a phonic approach. In addition, a recent comparison of ten separate approaches to beginning reading indicated that phonic programs were significantly better than whole word approaches.[7] Fay has reported that achievement results in comprehension were significantly in favor of the phonic group at the end of grades one and two but no significant differences between groups at the end of grades three, five, and six; although, at the end of grade four the basal group scored significantly better in reading accuracy than did the phonics group.[8] Tensuan and Davis, in a large experiment in the Philippines, reported that "the data lend no support to arguments in favor of using direct phonic drill in teaching beginning reading."[9]

More evidence appears to be needed not only to clarify the equivocality of the whole word vs phonic positions, but to secure additional evidence concerning factors affecting learning to read. Betts has noted, "More experimental studies are needed on the relative values of different methods of teaching phonics in a balanced program of reading instruction."[10]

According to Botel,[11] some advocates of "more phonics" have not applied sound research techniques to evaluate their claims for adding additional phonics to beginning reading instruction.

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[5]Margaret H. Greenman, "A Six Year Experimental Study of Two Methods of Teaching Reading in the Elementary School," a paper presented at a joint meeting of the International Reading Association and the American Research Association, February 1959.

[6]D. E. Bear, "Two Methods of Teaching Phonics - A Longitudinal Study," Elementary School Journal, 64 (February 1964), 273-279.

[7]Emery P. Bliesmer and Betty H. Yarborough, "A Comparison of Ten Different Beginning Reading Programs in First Grade," Phi Delta Kappan, 46 (June 1965), 500-504.

[8]Leo Fay, "A Look at Two Approaches to the Teaching of Reading," Changing Concepts in Reading, J. Allan Figural, ed., IRA Conference Proceedings, 6, 1961, 163.

[9]Empheratriz S. Tensuan and Frederick B. Davis, "An Experiment with Two Methods of Teaching Reading," The Reading Teacher, 18 (October 1964), 8-15.

[10]Emmett A. Betts, "Phonics: Practical Considerations Based on Research," Elementary English, 33 (October 1956), 365.

[11]Morton Botel, "President's Report," The Reading Teacher, 16, (January 1963), 279.

Spache,[12] has expressed hope that researchers in reading will control such variables as teacher motivation and interest, teacher competence and experience, non-longitudinal data, ineffectual follow-up in intermediate grades, unrealistic or unstandardized measures of reading and intelligence, and inadequate matching groups.

Student Attitude

Attitudes toward reading are just as important as the acquisition of reading skill. Reading skills are reinforced, refined, and extended by practice. As Strickland has said, a reader "... is not a person who can read; he is a person who does read."[13] Do first grade students who have seemingly superior reading skills as measured by standardized tests read more, and do they have significantly more favorable attitudes toward reading? Although some research studies have been completed on both interests and attitudes of first grade pupils, most apparently have not considered the development and interactions of interests, attitudes, and achievement simultaneously.

The Home

Another important area which deserves further investigation is the influence of the home. Possible differences in the home environment may tend to bias reading achievement in an experiment. Harris says, "The educational level reached by a child's parents, their occupational status and the number of books in the home are significantly related to the progress the child is likely to make in reading."[14] Almy[15] reports that the educational level of the parents and the number of books in the home correlate with reading success. Also, Russell and Fea state, "Much of the writing on the place of parents in children's reading development is hortatory and inspirational rather than grounded in research ... From the research point of view, more studies are needed which give specific data about the influence on reading achievement of parents' activities and educational aspirations."[16] At the very least, a fresh attempt should be made to evaluate the influence of the home on success in reading.

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[12]George Spache, "A New Alphabet?" The Reading Teacher, 16 (January 1963), 271-273.

[13]Ruth Strickland, "Children, Reading and Creativity," Elementary English, 34, (April 1957), 170-176.

[14]Albert J. Harris, "Reading and Human Development," Development in and Through Reading, The Sixtieth Yearbook of the National Society for the Study of Education, Part I, N.B. Henry, ed., (Chicago: The University of Chicago Press, 1961), 31.

[15]Millie C. Almy, "Children's Experiences Prior to First Grade and Success in Beginning Reading," Teachers College Record, 51, (1950), 392-393.

[16]David Russell and Henry R. Fea, "Research on Teaching Reading," Handbook of Educational Research on Teaching, N. L. Gage, ed., (Chicago: Rand McNally & Co. 1963), 917-918.

## PROCEDURES

The purpose of this research was to examine and analyze four different programs of reading instruction.

Procedures will be divided into the following sections: Methods and Materials, Pilot Study, Population, Teachers, Testing and Analysis of Test Results, Pupil Attitude, Achievement by Ability Levels, Teaching Characteristics and Pupil Expectancy Levels, Teaching Characteristics and Positive Reading Attitude, Home Influences and Testing.

### Methods and Materials

The four treatment variable programs were:

1. An eclectic, "whole word" reading program as represented by the Scott, Foresman Company 1960 edition.

2. A "phonic" reading program as represented by the J. B. Lippincott Company 1963 edition.

3. A combination eclectic, "whole word-phonic" reading program as represented by Scott, Foresman materials (No. One above) supplemented with the Phonics and Word Power 1964 edition.

4. A language arts approach using the initial teaching alphabet as a medium, represented by the i/t/a Publications, Inc. 1963 edition.

### Scott, Foresman Program

A brief description of the eclectic "whole word" method as represented by the Scott, Foresman program follows:

Scott, Foresman combines a variety of approaches.[17] It is often identified as the whole word or sight approach, a misnomer since the program incorporates some phonic and structural analysis word attack skills in grade one. The phonic word analysis skills taught in the grade one program are:

1. Perceiving and imaging the following consonant sounds in words: b, d, f, g, h, j, k, l, m, n, p, r, s, t, w, z, y.

   Associating the consonant sounds with the single consonant letters: b, c, d, f, g, h, j, k, l, m, n, p, r, s, t, w, y, z.

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[17] Helen M. Robinson, Marion Monroe, A. Sterl Artley, and W. Cabell Greet, The New Basic Readers, (Chicago: Scott, Foresman and Company, 1960-62.)

2. Associating a single consonant sound with two consonant letters: ck, wh, ch, th, and sh (also ss, ff, ll).

3. Consonant blends: Associating the proper sound with any blend represented by the letters: s, l, and r.

4. Identifying words by using consonant substitution in the initial or final positions.

5. Developing awareness of vowels while attacking words by use of consonant frames (d-g, p-g).

The structural analysis skills taught are:

1. Identifying and understanding root words.

2. Identifying and understanding structural changes made by adding: s, 's, ed, ing, and er of comparison to known words.

3. Identifying and understanding compound words made up of two known root words.

4. Identifying and understanding contractions in which one letter is omitted.

The designated Scott, Foresman book company consultant indicated that the basic books of grade one introduce a basic vocabulary of 323 words. Of these the child uses word analysis and context to attack 65 of these words independently when he first meets them in running text. Also, the first-grade basic books introduce many new forms of known words which are not counted in the basic vocabulary. Some of these new forms are listed in the back of the pupils' texts (7 s forms at PP3 level, 5 s forms at primer level, and 41 compounds made up of two known words and new forms made by adding or dropping ed or ing at Book One level.) Children use structural analysis and context to identify independently all of the new forms listed in the back of the readers. They also identify independently many new forms of known words made by adding or dropping s at primer level and s or 's at Book One level which are not listed in the back of the books and therefore are not counted. In grade one children also use word analysis and context to identify 623 unfamiliar words in word card and chalkboard exercises, 446 unfamiliar words in the Think-and-Do Books, and 248 unfamiliar words in We Three, the Reading for Independence book.

In this program children not only learn to identify the sound and form of words but to relate sound and form to meaning and function.

Reading is considered to be an act of getting meaning from the printed page. Scott, Foresman follows a typical basal reader skill organizational plan. It introduces sight words and uses these known words to teach language understandings and phonetic and structural analysis skills inductively, thus proceeding from the known to the unknown. Individual differences are provided for by class ability grouping.

Reading instruction began with a period of readiness. The length of the readiness period was based on the individual needs of the classroom. In the readiness program, auditory discrimination of consonant and vowel sounds was stressed, together with the understanding that changing one phoneme (sound) in a word makes a new word and changes the meaning (e.g., Can you eat a fish? and Can you eat a dish?) The use of phonetic and/or structural analysis skills and context in identifying unfamiliar words began with the second pre-primer and was accelerated in the primer and book one.

Each basic book had an accompanying workbook to reinforce, refine, and extend the content and skills program. Twenty-five experimental worksheets which correlated with the pre-primers were used in addition to the regular workbook. Children's understanding of the meaning and function of words was reinforced by the use of My Little Pictionary.

My Practice Pad, 1-1 and 1-2, also was used as supplementary seatwork.

This reading program will hereafter be referred to as SF.

Lippincott Program

The concentrated phonic approach was represented by the Lippincott materials. A brief description of the methods and materials follows:[18]

Although this method heavily emphasizes a phonics approach, it is unique in the respect that most initial instruction of new sound spellings may be approached either through the medium of filmstrips or from the textbooks. The program is based on a definition of reading as a process of turning printed symbols into sounds. The authors state that this mechanical decoding process must come first in order to unlock the meaning, thinking, and reasoning processes of reading. Starting with the sound spelling of the short vowel sounds (short a is the first) the phonic analysis skills program uses the twenty-six letters to spell forty-four basic sounds in two hundred fifty different ways. The child learns to recognize and practices the letter sounds in words which are taught as wholes. The authors term this a whole-phonic plus a whole meaning pattern of learning to read.

The structural analysis skills include compound words, roots, endings (ing, ed, d, tion).

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[18]Glenn McCracken and Charles C. Walcutt, Basic Reading, (New York: J. B. Lippincott Company 1963).

The program presents more than two thousand words in lists and stories at the grade one level. No vocabulary control is used. Words for which the phonic elements have not been taught but are needed for making story writing easier, are presented as special (sight) words; twenty-four special words are introduced by the end of Book 1-1. No special words are taught in Book 1-2 since all phonic elements have already been introduced and the pupils are expected to use their newly acquired word attack skills to decode any unknown words.

Readiness skills are developed simultaneously as the child is learning the sound spellings. The eight textfilms, whose frames represent pages condensed from the readers, were used to present each new lesson at the screen for approximately thirty minutes with the whole class approach. Following the screen session, the basic books are used. Although most morning sessions follow a whole class grouping procedure, some class grouping, on a special needs basis, was used in the afternoons.

The basic materials used were eight correlated textfilms, a pre-primer, primer, Book 1-1 and Book 1-2. This reading program will hereafter be referred to as LIPP.

Phonics and Word Power Program

The third independent treatment variable was a combination of the Scott, Foresman reading program as outlined previously and supplemented with Phonics and Word Power, Program 1.[19]

Three pages of the Phonics and Word Power program were taught per week. The amount of time utilized was not less than twenty nor more than thirty minutes per day, within the five hundred sixty minute weekly time limits. The word analysis skills taught in this program are:

The phonics analysis program included recognition of the consonants t, m, d, h, c, (hard); l, b, n, r, f, w, j, g, p, s, y, v, z, (initial); t, m, d, l, n, g, k, p, s, (final); and b, g, c, d, (hard) l, m, n, t, v, w, (medial); initial digraphs, th, sh; medial digraphs, sh, th; final digraphs, sh; and blends.

Structural analysis concepts taught were: adding s, ing, ed endings to nouns and verbs; compound words of two known forms; singular possessives and root words.

This independent treatment variable will hereafter be referred to as PWP.

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[19]Eleanor M. Johnson, Carlton Singleton and Elaine Wonsavage, Phonics and Word Power, Program 1, (Columbus: American Education Publications 1964).

Initial Teaching Alphabet Program

A brief description of the fourth independent treatment variable as represented by the i/t/a materials[20] of Tanyzer and Mazurkiewicz follows:

> In these materials the authors have attempted to simplify the reading medium by removing phonic inconsistencies and spelling irregularities of the traditional alphabet. The medium is a forty-four character Initial Teaching Alphabet, as devised by Sir James Pitman, which represents the forty odd phonemes of the English language. The methodology emphasizes reading as a deciphering of the printed code by teaching children to associate each of the forty-four i.t.a. symbols with the spoken sound. The major goal of the program is to have the children transfer the skills and abilities they have learned to the more complex aspects of traditional orthography. Reading begins with a readiness period which is incorporated with Ready for Reading. Instruction integrates the following language arts approach: introduction of specific sound visual recognition, writing activity in workbooks or by means of an experience story, (used throughout the entire program) and then reading activity. Recognition of the symbol sounds begins with a (as in apple), n, t, ... z, which is the last symbol sound introduced in Book Three. In Books four, five and six, the children are expected to independently identify new words in the context of the story.
>
> Structural analysis concepts taught are endings and inflected forms: s, ed, 's, ing. es, er; compound words, root words, and dividing two syllable words. These skills are developed and extended in Books four, five and six.
>
> Transition activities are begun in the second half of Book Six commencing with capital letters and is formally completed in the first half of Book Seven in which the most frequently used spelling patterns are taught. The transition program is primarily a spelling activities program. The authors recommend ability grouping as a procedure for helping to provide for individual differences; a two group per class procedure was followed most of the time and two classes followed a three grouping plan. The children are introduced to about a fifteen hundred to two thousand word uncontrolled vocabulary.
>
> The following materials of the program were used: My Alphabet Book, My Number Book, Ready for Reading (Book One) Book Two, Book Three, Workbook to Two and Three, Book Four, Workbook to Book Four, Book Five, Book Six, Workbook to Book Five and Book Seven (transition) and Workbook to Book Seven.
>
> This independent treatment variable and materials will hereafter be referred to as i/t/a.

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[20]Harold J. Tanyzer and Albert J. Mazurkiewicz, Early to Read i/t/a Program, (New York: i/t/a Publications, Inc. 1964).

Teachers used only those materials and methods which were recommended by the participating book company consultants-authors: Miss Ednamae Bruggeman, Educational Consultant - SF; Glenn McCracken, co-author - LIPP; the SF consultant and co-authors Dr. Carlton Singleton and Elaine P. Wonsavage - PWP; and Dr. Albert Mazurkiewicz (co-author) and Dr. Mary Shinaberry (independent consultant) - i/t/a. Teacher logs as well as classroom observations by the book company consultants-authors and the supervisory personnel attested that the teachers adhered to the methods and materials of each program.

The reading instructional period was restricted to five hundred sixty minutes of direct teaching per week and to one hundred forty school days (between pre- and post-tests). Reading instructional time was defined as direct pupil-teacher contact. Such activities as building background, creative writing, spelling, handwriting, recreational reading and content area reading were considered language arts supportive activities and were not included in the time limitations. The five hundred sixty minutes weekly time limit was restricted to direct teacher instructional time; in other words, each pupil in classes using ability groups received a portion of the five hundred sixty minutes weekly of direct teacher instructional time. The first day of instruction commenced on September 16, 1964 and final achievement testing began after the one hundred fortieth instructional day, April 28, 1965.

Supplementary reading activities for each independent variable were encouraged by the teachers who utilized approximately equal classroom libraries. Each i/t/a group had an additional (i.t.a. alphabet) one hundred sixty book (including duplicate copies) library in addition to the regular classroom library.

## Pilot Study

During the 1963-1964 school year, three classes of SF and three classes of LIPP were compared in grade one and then followed into grade two in 1964-65. Except for different test instruments and not randomly assigning pupils to treatments, the same general procedures were used as described in the following sections dealing with the major study.

## The Population - New Castle Area Schools

The first grade pupils of the ten participating elementary schools were randomly assigned (using a table of random numbers[21]) by attendance areas to the desired number of first grade classrooms. The groups were then randomly assigned to the first grade teachers of that building who had volunteered to teach a particular reading program. Ten of the twelve elementary schools and twenty of the thirty grade one classrooms were used. These twenty classes originally included four hundred fifteen students with five first grade teachers and classes involved with each of the four independent treatment variables.

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[21] Shelby, Weast, Shankland and Hodgeman, Handbook of Mathematical Tables, Supplement to Handbook of Chemistry and Physics, (Chemical Rubber Publishing Company 1963).

At the close of the school year there were three hundred sixty-five students with nineteen classrooms and teachers. One teacher and class was lost due to illness of the teacher. The four independent treatment variable groups were approximately equal as to socio-economic level since no statistically significant mean differences were found when an analysis of variance of the educational level of the parent (father) was completed. This data plus the number of books in the home and amount of pre-school experience was gathered by the teacher during a home visitation. (See Appendix A).

The Pintner Cunningham Primary Test of Intelligence (1964 revision) was administered to all pupils by the school psychologist in early October, 1964. A statistically significant difference was found between IQ raw score means for only SF and PWP. The average IQ of all pupils was 91, the mean chronological age was about six years, three and one-half months and the average mental age was five years, seven months (See Appendix B for IQ and other pre-experimental data).

New Castle does not provide a public kindergarten program. However, certain independent agencies do provide kindergarten. As reported in Appendix B, the average amount of kindergarten per pupil was only one-half day per year.

The average number of students per classroom was: SF - 19, LIPP - 23, PWP - 26, i/t/a - 23. The average number of pupils for all classrooms was 23.

Teachers

During the spring of 1964, the first grade teachers were asked to volunteer for the reading study and to indicate a first and alternate choice of programs. Twenty-two teachers volunteered, twenty of which were selected randomly and assigned as closely as possible to indicated preferences. Thus, five teachers were originally assigned to each independent treatment variable. However, illness eliminated one SF teacher, reducing that group to four teachers and sixty-seven pupils.

Every effort was made to provide equal attention and help for all teachers so that Hawthorne effects might be considered balanced. A three day pre-school orientation meeting conducted by book company consultants-authors was held for the purposes of motivation, method instruction, and familiarization of all teachers with the objectives, scope, sequence, and proper utilization of all the respective reading materials. Each participating teacher was also visited once a month for seven months on a random basis by the book company consultant-author to observe teaching methods and materials and to help avoid contamination of independent variables. These visits lasted not more than a fifty-minute period and were announced on the morning of each visitation day. On the same day of such visitations, after-school in-service workshops (not less than sixty nor more than ninety minutes) were provided for all five teachers of each independent treatment variable. It was hoped that such in-service meeting would further encourage and maintain the efficacious utilization of the particular methods and materials, and also help stimulate a high level of motivation.

In addition, the building principal (six times) and the Assistant Superintendent (two times) visited each classroom randomly during the year. The full time Field Director of the research randomly visited each teacher eleven times and the Project Director visited each classroom once. These twenty administrative visits were made for the purpose of confirming independent variable validity and evaluating teachers. Four sets of teacher effectiveness ratings were obtained with the Hayes Teacher Rating Scale (Appendices D and E). The Kendall Coefficient of Concordance W was .66 between raters; this coefficient exceeded the .001 level of significance which indicated a high level of inter-judge reliability. The teacher ratings were analyzed by both the Kruskal-Wallis test and analysis of variance with similar results.

As still another variable validity check, teachers' logs were compiled for every instructional day during the first half of the experiment and for seven randomly selected weeks thereafter (See Appendix C, format of teacher log). An analysis of the log contents indicated close adherence to instructional time limitations and also helped confirm each independent variable's validity.

## Testing and Analysis of Test Results

The Lee Clark Reading Readiness Test was administered in May, 1964. The following additional pre-experimental tests were administered September 8 - 15, 1964:

Detroit Word Recognition
Murphy-Durrell Diagnostic Reading Readiness
Metropolitan Reading Readiness
Thurstone Pattern Copying and Identical Forms

The Pintner Cunningham Primary Intelligence Test was administered September 16 - 30, 1964. One classroom had the test administered October 14, 1964.

On January 26 and 27, 1965 (the 82nd day of instruction), the Stanford Achievement Test, Primary I Battery, Form W was administered. The i/t/a group took a transliterated form of this test.

On April 28 and 29, 1965 (the 141st day of instruction), the Stanford Achievement Test, Primary I Battery, Form X and the San Diego County Inventory of Reading Attitude were administered. No transliterated forms were included in the testing program at the end of the instructional period.

All group tests were administered by the teachers with a neutral professional person in the room. Both teachers and observers attended pre-test orientation workshops, conducted by the Field Director. The importance of following standardized directions and time limitations were stressed at these sessions.

The following individual tests were administered May 3-10, 1965, by the Field Director to a random sample (picked by consulting a table of random numbers) of thirty students from each treatment variable:

Gilmore Oral Reading Test
Gates Word Pronunciation Test (Form I, 40 of the 80 words), which includes phonetically irregular and phonetically regular words.
Fry list of Phonetically Regular Words Oral Reading Test.

All tests were scored by competent third parties and then rechecked for accuracy. Results were analyzed by either covariance or analysis of variance using the University of Minnesota version of MANOVA.

Coefficients of correlations were computed to see which of the pre-experimental variables best correlated with the dependent variables (See Appendix H). September pre-experimental test results which had the highest statistically significant correlations with silent reading achievement (Stanford) were chosen as covariates; these covariates were:

Murphy-Durrell Phonemes
Murphy-Durrell Letter Names
Metropolitan Total
I.Q. Raw Score

In addition, educational level of parents was selected as a covariate to reduce socio-economic differences. To adjust for teaching variability, the teacher effectiveness ratings were included as another covariate.

The coefficients of correlations were not sufficiently high enough to be statistically significant between the pre-experimental variables and the oral reading tests (See Appendix H). Accordingly, analysis of variance was used to test differences among the oral reading means.

Pupil Attitude

To determine which of the four independent treatment variable groups produced significantly different group attitudes toward reading, the San Diego County Inventory of Reading Attitude[22] was administered in early May, 1965. Teachers read each item to their pupils. The difference among group means was tested using analysis of variance.

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[22] An Inventory of Reading Attitude, Monograph No. 4, (San Diego, California: Department of Education, San Diego County, 1961).

Achievement By Ability Levels

To answer the question of which independent treatment variable seems to be best for different ability levels, each of the four independent treatment groups was partialed into raw score IQ thirds and the unadjusted raw score means were tested for statistical significance by analysis of variance.

Teaching Characteristics And Pupil Expectancy Levels

One of the objectives of this research was to determine the teaching characteristics of those teachers whose pupils had above average success in learning to read compared to their Bond and Tinker Reading Expectancy Grade Score.[23]

Above average pupil success in learning to read was defined in terms of Bond and Tinker Reading Expectancy Scores compared to Stanford grade equivalent scores achieved on April 28, 1965. Reading expectancy scores were calculated by the formula: years in school x I.Q. + 1.0.[23] The number of years in school in this study was 0.7 since this reflects actual days of instruction between pre- and post-test. The I.Q. was obtained from the June 1965 revised Pintner-Cunningham norms. The reading expectancy scores were compared to Stanford Achievement grade equivalent scores for Word Reading, Paragraph Meaning, and Word Study. If a child achieved one-half grade equivalent score or more above his expectancy grade score for two out of three of these reading subtests, he was considered an above average reader. If at least fifty percent of a class was above average in reading, then the teaching characteristics were considered for the teacher involved.

Teaching characteristics were determined by utilizing the Hayes Teacher Rating Scale (See Appendix D). This instrument is an adaption of one used successfully for several decades to rate student teachers in the United States Air Force Instructors School at Maxwell Air Force Base, Montgomery, Alabama. Its scale is divided into five general categories: Planning, Knowledge, Communication to Students, Classroom Management, and Teaching Personality. Within each general category, finer discriminations can be made by the utilization of a three point scale: M for average; + for above average; and - for below average. After making these finer discriminations using the descriptions given under each general category, the evaluator then rates each general category on a five point scale (0-4). Averages of twenty independent evaluations were then computed for each of the five general categories and classified according to the rating ranges and categories in Appendix E.

Teaching Characteristics And Positive Reading Attitude

Another research objective was to identify teaching characteristics of those teachers whose students considered reading as their favorite subject.

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[23] Guy L. Bond and Miles A. Tinker, Reading Difficulties, Their Diagnosis and Correction, (New York: Appleton-Century Crofts, Inc. 1957), 76-80.

Two basic measuring instruments were used to meet the requirements of this objective: the Hayes Teacher Rating Scale, and the San Diego County Inventory of Reading Attitude, both of which have been previously discussed. Students who considered reading as their favorite subject were identified as those who made raw scores of nineteen (stanine six) or better on the San Diego County Inventory of Reading Attitude. The teaching characteristics were analyzed for teachers with at least fifty per cent of their pupils having raw scores of 19 or better.

### Home Influences

Since New Castle Area Schools have no public kindergarten, first grade students attended school only during the morning for the first ten school days of the school year. This procedure allowed the child to adjust to school routines and permitted the first grade teacher to visit each pupil's home during the afternoons. During these visits, the teacher gathered data concerning the educational level of the father, kindergarten experience, the number of books and magazines in the home (See Appendix A).

At the conclusion of the 140 days of instruction, each pupil was asked by the teacher how many times per week an adult read to him (her) at home (See Appendix F). Data was collected concerning the total number of independently read books by the pupil during the period February 1, 1965 to May 21, 1965. The pupil was encouraged to fill out a record of the books he read in the classroom and at home. Teachers were encouraged to spot check the books read by asking general comprehension questions as time permitted. A copy of the form used to gather this information may be found in Appendix G.

## ANALYSIS OF DATA AND FINDINGS

### Pilot Study

The results for the pilot study are given in Appendix K. Since the pupils were not randomly assigned to treatments, the class means were considered the basic observations for statistical analysis and the differences between means could not be accepted as significant. The results did favor LIPP; this was particularly the case in grade one and in mid-year of grade two.

### January Stanford Achievement Test Results - Grade One

Table 1 reports findings for silent reading achievement at the end of eighty-two instructional days with means adjusted for pre-experimental differences in reading readiness, intelligence, socio-economic level and teacher effectiveness. Adjusted mean grade equivalent scores are reported in Appendix J.

Table 1
Silent Reading Achievement Means and Differences Among Means[1] in January

| Reading Programs[2] | | Adjusted Raw Score Means | Differences Among Program Means: LIPP | PWP | i/t/a[3] |
|---|---|---|---|---|---|
| SF | WR | 11.36 | 6.19a | 3.26e | 11.68a |
| | PM | 7.85 | 7.80a | 4.44b | 6.47a |
| | V | 19.13 | 0.10 | 1.25 | -0.09 |
| | S | 2.73 | 5.17a | 3.42e | 8.82a |
| | WSS | 27.13 | 7.39a | 5.15a | 13.13a |
| | Arith | 26.61 | -1.34 | 1.82 | .61 |
| LIPP | WR | 17.55 | | -2.93e | 5.49c |
| | PM | 15.65 | | -3.36d | -1.33 |
| | V | 19.23 | | 1.15 | -0.19 |
| | S | 7.89 | | -1.74 | 3.66a |
| | WSS | 34.51 | | -2.23 | 5.75c |
| | Arith | 25.27 | | 3.16 | 1.95 |
| PWP | WR | 14.62 | | | 8.42a |
| | PM | 12.29 | | | 2.04 |
| | V | 20.38 | | | -1.34 |
| | S | 6.15 | | | 5.40a |
| | WSS | 32.28 | | | 7.98a |
| | Arith | 28.43 | | | -1.21 |
| i/t/a | WR | 23.04 | | | |
| | PM | 14.33 | | | |
| | V | 19.04 | | | |
| | S | 11.55[4] | | | |
| | WSS | 40.26 | | | |
| | Arith | 27.22 | | | |

[1]Stanford Achievement Test, Primary I
Form W. January 26, 1965
WR - Word Reading
PM - Paragraph Meaning
V - Vocabulary
S - Spelling
WSS - Word Study Skills
Arith - Arithmetic

a. Significant at .001 level
b. Significant at .01 level
c. Significant at .005 level
d. Significant at .02 level
e. Significant at .05 level

Positive differences favor program at top
Negative differences favor program at left

[2]Reading Programs
SF - Scott, Foresman
LIPP - Lippincott
PWP - Phonics and Word Power
i/t/a - Pitman Publishing Co.

[3]Tests administered in initial teaching alphabet

[4]Counting words correct in both t.o. and i.t.a.

Table 1 indicates the following mid-year findings when the i/t/a group was given the Stanford test in i/t/a:

A. Word Reading

1. The means of LIPP, PWP, and i/t/a were significantly higher than the SF mean.

2. The means of LIPP and i/t/a were significantly higher than the PWP mean.

3. The mean differences between i/t/a and LIPP favored i/t/a at a significant level.

B. Paragraph Meaning

1. LIPP, PWP, and i/t/a means were significantly higher than the SF mean.

2. LIPP was significantly higher than PWP.

3. No significant differences were found when i/t/a was compared to LIPP and PWP.

C. Spelling

1. LIPP, PWP, and i/t/a means were significantly higher than the SF mean.

2. i/t/a was significantly higher than LIPP and PWP.

3. No significant differences ware found between PWP and LIPP.

D. Word Study Skills

1. LIPP, PWP, and i/t/a means were significantly higher than the SF mean.

2. i/t/a was significantly higher than either LIPP or PWP.

3. No significant differences were found between LIPP and PWP.

E. Achievement in arithmetic apparently did not suffer as a result of this study.

End of April Stanford Achievement Test Results - Grade One

Adjusted mean grade equivalent scores are given in Appendix J.

Table 2 compares silent reading achievement at the end of one hundred forty days of instruction.

Table 2
Silent Reading Achievement Means and Differences Between Means[1] at the End of April

| Reading Programs[2] | | Adjusted Raw Score Means | Differences Among Program Means: LIPP | PWP | i/t/a |
|---|---|---|---|---|---|
| SF | WR | 18.65 | 6.58a | 3.22d | 5.05b |
| | PM | 19.80 | 3.51c | 3.22d | 1.21 |
| | V | 21.67 | 0.54 | -0.77 | -0.41 |
| | S | 9.94 | 2.55c | 2.69c | -0.67[4] |
| | WSS | 35.11 | 3.83b | 3.55d | 3.52d |
| | Arith | 36.67 | -2.22 | 1.29 | -0.11 |
| LIPP | WR | 25.23 | | -3.36c | -1.53 |
| | PM | 23.32 | | -0.30 | -2.30 |
| | V | 22.21 | | -1.31 | -0.95 |
| | S | 12.49 | | 0.14 | 1.50 |
| | WSS | 38.94 | | -0.28 | -0.31 |
| | Arith | 34.45 | | 3.51 | 2.11 |
| PWP | WR | 21.87 | | | 1.83 |
| | PM | 23.02 | | | -2.01 |
| | V | 20.90 | | | 0.36 |
| | S | 12.63 | | | 1.36 |
| | WSS | 38.66 | | | -0.03 |
| | Arith | 37.96 | | | -1.40 |
| i/t/a | WR | 23.70 | | | |
| | PM | 21.01 | | | |
| | V | 21.26 | | | |
| | S | 13.99[3] | | | |
| | WSS | 38.63 | | | |
| | Arith | 36.56 | | | |

[1]Stanford Achievement Test, Primary I
Form X, May 1, 1965
WR - Word Reading
PM - Paragraph Meaning
V - Vocabulary
S - Spelling
WSS - Word Study Skills
Arith - Arithmetic

a. Significant at .001 level
b. Significant at .01 level
c. Significant at .02 level
d. Significant at .05 level

Positive differences favor program at top
Negative differences favor program at left

[2]Reading Programs
SF - Scott, Foresman
LIPP - Lippincott
PWP - Phonics and Word Power
i/t/a - Pitman Publishing Co.

[3]Counting words correct if spelled in either t.o. or i.t.a.

[4]Counting words spelled in t.o. only the mean was 9.27 for i.t.a. The entire test was administered in traditional orthography but i/t/a pupils when given the spelling words of course often wrote them in i/t/a.

Table 2 indicates the following findings as of the end of April 1965, when the i/t/a group was given the Stanford test in traditional orthography:

A. Word Reading

1. LIPP, PWP, and i/t/a means were significantly higher than the SF mean.

2. LIPP was significantly higher than PWP.

3. The mean differences of PWP vs i/t/a and LIPP vs i/t/a were not found to be significant.

B. Paragraph Meaning

1. Statistically significant differences were found in favor of PWP and LIPP compared to SF.

2. No statistically significant differences were found between means of SF vs i/t/a, PWP vs LIPP, PWP vs i/t/a, and LIPP vs i/t/a.

C. Spelling

1. When means of PWP and LIPP were compared to SF, a statistically significant difference was found in favor of PWP and LIPP.

2. When the traditional orthographic spelling of the SF and i/t/a groups were compared, no statistically significant difference was found.

3. When the spelling of the i/t/a group was counted correct in both i/t/a and t/o, no statistically significant differences were found among PWP, LIPP, and i/t/a.

D. Word Study Skills

1. LIPP, PWP, and i/t/a means were significantly higher than the SF mean.

2. No other statistically significant differences were found when mean differences were compared.

E. Achievement in arithmetic apparently did not suffer as a result of this study.

Oral Reading Achievement - Grade One

Oral reading achievement at the end of 140 days of instruction for a subsample of thirty students from each treatment group (reduced to twenty-four for SF) is shown in table 3. Since none of the pre-experimental variables correlated significantly with oral achievement, analysis of variance was employed and the means were not adjusted.

Table 3
Oral Reading Achievement Means and Differences Among Means

| Program | Measure[1] | Mean[2] | Differences Among Program Means: LIPP | PWP | i/t/a |
|---|---|---|---|---|---|
| SF | GA | 19.21 | 1.02 | -2.78 | 1.62 |
| | GC | 18.00 | -3.40 | -3.20 | -1.50 |
| | GR | 72.33 | -10.36 | -11.03 | 5.67 |
| | Fry | 4.79 | 11.98a | -.49 | 13.04a |
| | Gates | 13.13 | 7.34a | -2.73 | 8.80a |
| LIPP | GA | 20.23 | | -3.80 | .60 |
| | GC | 14.60 | | .20 | 1.90 |
| | GR | 61.97 | | - .67 | 16.03b |
| | Fry | 16.77 | | -12.47a | 1.06 |
| | Gates | 20.47 | | -10.07a | 1.46 |
| PWP | GA | 16.43 | | | 4.40 |
| | GC | 14.80 | | | 1.70 |
| | GR | 61.30 | | | 16.70b |
| | Fry | 4.30 | | | 13.53a |
| | Gates | 10.40 | | | 11.53a |
| i/t/a | GA | 20.83 | | | |
| | GC | 16.50 | | | |
| | GR | 78.00 | | | |
| | Fry | 17.83 | | | |
| | Gates | 21.93 | | | |

[1]Measures
GA - Gilmore Accuracy
GC - Gilmore Comprehension
GR - Gilmore Rate
Fry - Fry List of Phonetically Regular Words Oral Reading Test
Gates - Gates Word Pronunciation Test (Form I)

None of these tests were transliterated for the i/t/a group.

[2]Unadjusted for pre-experimental differences

Positive differences favor program at top
Negative differences favor program at left

a. Significant at .01 level
b. Significant at .05 level

No statistically significant differences among means were found for Gilmore Oral Reading Accuracy and Gilmore Comprehension. I/t/a was significantly higher than either LIPP or PWP for Gilmore Oral Reading Rate, but other possible pairs of means did not differ significantly.

On the Fry List of Phonetically Regular Words Oral Reading Test, both LIPP and i/t/a were significantly higher than SF and PWP. Other pairs of means did not differ significantly on this test.

The differences among means on the Gates Word Pronunciation Test (which included phonetically irregular words) indicated that both LIPP and i/t/a were significantly higher than SF and PWP. Other pairs of means did not differ significantly on the Gates Test.

Pupil Attitude - Grade One

An attempt was made to ascertain which reading program resulted in significant differences of pupil attitude toward reading. Table 4 gives the findings obtained by analysis of variance:

Table 4
Pupil Attitude Toward Reading[1]

| | | Differences Between Program Means[2] | | |
|---|---|---|---|---|
| Treatment | Mean | LIPP | PWP | i/t/a |
| SF | 17.24 | .64 | 2.02a | .46 |
| LIPP | 17.88 | | 1.38a | -.18 |
| PWP | 19.26 | | | -1.56a |
| i/t/a | 17.70 | | | |

[1]As measured by the San Diego County Inventory of Reading Attitude

[2]Positive differences favor program at the top
Negative differences favor program at the left

a. Significant at .05 level

The following table compares the average number of books read:

Table 5
Pupil Book Reading

| | | Differences Among Program Means[1] | | |
|---|---|---|---|---|
| Program | Mean | LIPP | PWP | i/t/a |
| SF | 61.00 | -12.83b | -37.36a | -33.54a |
| LIPP | 48.17 | | -24.53a | -20.71a |
| PWP | 23.64 | | | 3.82 |
| i/t/a | 27.46 | | | |

[1]Negative differences favor program at left
Positive differences favor program at top

a. Significant at the .001 level

b. Significant at the .05 level

The above table indicates that differences significantly favored SF compared to LIPP, PWP, and i/t/a. Also the LIPP group read a significantly greater number of books than did either PWP or i/t/a.

End of April Stanford Achievement By Ability Levels - Grade One

To answer the question, "Which independent treatment variable appears to be best for different ability levels?" each independent treatment group was partitioned into I.Q. thirds and the unadjusted raw score achievement means were tested for statistical significance by analysis of variance. The reader is cautioned that the achievement raw score means have not been adjusted for pre-experimental differences since the goal was to find which program was best for which kinds of pupils (above average. average, and below average ability).

Table 6
High IQ Ability Level and Silent Reading Achievement

| Program | Subtest[1] | Mean[2] | Differences Among Program Means LIPP | PWP | i/t/a |
|---|---|---|---|---|---|
| SF | WR | 23.80 | 7.98a | 1.01 | 6.36a |
| | PM | 27.07 | 4.35b | -1.69 | 4.34b |
| | S | 13.97 | 3.67a | 2.66b | 3.84c |
| | WSS | 42.90 | 4.68b | -0.90 | 5.16a |
| LIPP | WR | 31.78 | | -6.97a | -1.62 |
| | PM | 31.42 | | -6.04a | -0.01 |
| | S | 17.64 | | -1.01 | .17 |
| | WSS | 47.58 | | -5.58a | .48 |
| PWP | WR | 24.81 | | | 5.35a |
| | PM | 25.38 | | | 6.03a |
| | S | 16.63 | | | 1.18c |
| | WSS | 42.00 | | | 6.06a |
| i/t/a | WR | 30.16 | | | |
| | PM | 31.41 | | | |
| | S | 17.81 | | | |
| | WSS | 48.06 | | | |

[1]Stanford Achievement Test, Primary I. Form X
April 28, 29, 1965
WR - Word Reading
PM - Paragraph Meaning
S - Spelling
WSS - Word Study Skills

[2]Unadjusted for pre-experimental differences

Positive differences favor program at top
Negative differences favor program at left

a. Significant at .01 level
b. Significant at .02 level
c. No comparison - Conclusions would vary according to whether or not words spelled in i/t/a were considered correct.

Table 7
Average IQ Ability Level and Silent Reading Achievement

| Program | Subtest[1] | Mean[2] | Differences Between Means LIPP | PWP | i/t/a |
|---|---|---|---|---|---|
| SF | WR | 19.17 | 7.55a | 1.17 | 6.89a |
| | PM | 22.56 | 2.16 | -3.28 | 1.00 |
| | S | 10.44 | 3.03a | -0.34 | 5.12c |
| | WSS | 34.28 | 6.03b | .26 | 7.05a |
| LIPP | WR | 26.72 | | -6.38a | -0.66 |
| | PM | 24.72 | | -5.44a | -1.16 |
| | S | 13.47 | | -3.37a | 2.09c |
| | WSS | 40.31 | | -5.77a | 1.02 |
| PWP | WR | 20.34 | | | 5.72a |
| | PM | 19.28 | | | 4.28a |
| | S | 10.10 | | | 5.46c |
| | WSS | 34.54 | | | 6.79a |
| i/t/a | WR | 26.06 | | | |
| | PM | 23.56 | | | |
| | S | 15.56 | | | |
| | WSS | 41.33 | | | |

[1] Stanford Achievement Test, Primary I, Form X
April 28-29, 1965

WR -Word Reading
PM - Paragraph Meaning
S - Spelling
WSS - Word Study Skills

[2] Unadjusted for pre-experimental differences

Positive differences favor program at top
Negative differences favor program at left

a. Significant at .01 level
b. Significant at .02 level
c. Conclusions would vary according to spelling count used

Table 8
Low IQ Ability Level and Silent Reading Achievement

| Program | Subtest[1] | Mean[2] | Differences Between Means LIPP | PWP | i/t/a |
|---|---|---|---|---|---|
| SF | WR | 15.53 | .82 | -1.20 | 3.75b |
| | PM | 14.16 | -0.87 | .38 | -0.80 |
| | S | 7.26 | -1.47 | -0.36 | 4.28c |
| | WSS | 30.42 | -2.83 | .25 | 2.47 |
| LIPP | WR | 16.35 | | -2.02 | 2.93b |
| | PM | 13.29 | | 1.25 | .07 |
| | S | 5.79 | | 1.11 | 5.75c |
| | WSS | 27.59 | | 3.08 | 5.30a |
| PWP | WR | 14.33 | | | 4.95a |
| | PM | 14.54 | | | -1.18 |
| | S | 6.90 | | | 4.64c |
| | WSS | 30.67 | | | 2.22 |
| i/t/a | WR | 19.28 | | | |
| | PM | 13.36 | | | |
| | S | 11.54 | | | |
| | WSS | 32.89 | | | |

[1]Stanford Achievement Test, Primary I, Form X
April 28-29, 1965

WR - Word Reading
PM - Paragraph Meaning
S - Spelling
WSS - Word Study Skills

[2]Unadjusted for pre-experimental differences

Positive differences favor program at top
Negative differences favor program at left

a. Significant at .01 level
b. Significant at .05 level
c. Conclusions would vary according to spelling count used

From the preceding three tables, the following findings are indicated:

A. High IQ Third

1. LIPP and i/t/a were significantly higher than SF and PWP in Word Reading, Paragraph Meaning, and Word Study Skills.

2. LIPP and PWP were significantly higher than SF in Spelling. No comparisons were made in Spelling for i/t/a since the conclusions would vary depending on whether or not spelling in i/t/a was counted as correct.

B. Middle IQ Third

1. LIPP and i/t/a were significantly higher than SF and PWP on Word Reading and Word Study Skills.

2. In Paragraph Meaning, LIPP and i/t/a were significantly higher than PWP.

3. In Spelling, LIPP was significantly higher than SF and PWP.

C. Low IQ Third

1. In Word Reading, i/t/a was significantly higher than PWP, SF, and LIPP.

2. No significant differences were found for Paragraph Meaning among the four groups.

3. No significant differences appeared in Spelling among SF, PWP, and LIPP.

4. I/t/a was significantly higher than LIPP in Word Study Skills.

Oral Reading Achievement By Ability Levels - Grade One

The following tables indicate findings for oral reading achievement when the data was partialed into unadjusted raw score means by IQ thirds:

Table 9
High IQ Ability Level and Oral Reading Achievement

| Program | Subtest[1] | Mean[2] | Differences Between Means LIPP | PWP | i/t/a |
|---|---|---|---|---|---|
| SF | GA | 22.00 | 12.10a | .63 | 6.63b |
| | GC | 20.23 | .97 | -4.10 | .52 |
| | GR | 72.23 | 18.07 | 5.02 | 33.52a |
| | Fry | 6.69 | 18.71a | -0.06 | 16.69a |
| | Gates | 14.62 | 13.48a | .21 | 12.63a |
| LIPP | GA | 34.10 | | -11.47a | -5.47 |
| | GC | 21.20 | | - 5.07 | -.45 |
| | GR | 90.30 | | -13.05 | 15.45 |
| | Fry | 25.40 | | -18.77a | -2.02 |
| | Gates | 28.10 | | -13.27a | -.85 |
| PWP | GA | 22.63 | | | 6.00b |
| | GC | 16.13 | | | 4.62 |
| | GR | 77.25 | | | 28.50a |
| | Fry | 6.63 | | | 16.75a |
| | Gates | 14.83 | | | 12.42a |
| i/t/a | GA | 28.63 | | | |
| | GC | 20.75 | | | |
| | GR | 105.75 | | | |
| | Fry | 23.38 | | | |
| | Gates | 27.25 | | | |

[1]Subtests:

GA - Gilmore Oral Reading Test Accuracy
GC - Gilmore Oral Reading Test Comprehension
GR - Gilmore Oral Reading Test Rate
Fry - Fry List of Phonetically Regular Words Oral Reading Test
Gates - Gates Word Pronunciation Test

[2]Unadjusted for pre-experimental differences

Positive differences favor program at top
Negative differences favor program at left

a. Significant at .01 level
b. Significant at .05 level

Table 10
Average IQ Ability Level and Oral Reading Achievement

| Program | Subtest[1] | Mean[2] | Differences Between Means LIPP | PWP | i/t/a |
|---|---|---|---|---|---|
| SF | GA | 18.40 | -1.29 | .69 | 1.35 |
| | GC | 19.20 | -5.53b | -2.84 | -3.20 |
| | GR | 71.40 | -18.96b | +0.49 | 10.60 |
| | Fry | 4.00 | 11.33a | 1.18 | 14.08a |
| | Gates | 14.00 | 6.89 | -1.91 | 8.75b |
| LIPP | GA | 17.11 | | 1.98 | 2.64 |
| | GC | 13.67 | | 2.69 | 2.33 |
| | GR | 52.44 | | 18.47 | 29.56b |
| | Fry | 15.33 | | -10.15a | 2.75 |
| | Gates | 20.89 | | -8.80b | 1.86 |
| PWP | GA | 19.09 | | | .66 |
| | GC | 16.36 | | | -0.36 |
| | GR | 70.91 | | | 11.09 |
| | Fry | 5.18 | | | 12.90a |
| | Gates | 12.09 | | | 10.66a |
| i/t/a | GA | 19.75 | | | |
| | GC | 16.00 | | | |
| | GR | 82.00 | | | |
| | Fry | 18.08 | | | |
| | Gates | 22.75 | | | |

[1]Subtests:
GA - Gilmore Oral Reading Test Accuracy
GC - Gilmore Oral Reading Test Comprehension
GR - Gilmore Oral Reading Test Rate
Fry - Fry List of Phonetically Regular Words Oral Reading Test
Gates - Gates Word Pronunciation Test

[2]Unadjusted for pre-experimental differences

Positive differences favor program at top
Negative differences favor program at left

a. Significant at .01 level
b. Significant at .05 level

Table 11
Low IQ Ability Level and Oral Reading Achievement

| Program | Subtest[1] | Mean[2] | Differences Between Means LIPP | PWP | i/t/a |
|---|---|---|---|---|---|
| SF | GA | 13.83 | -3.65 | -4.56 | 2.07 |
| | GC | 10.50 | -1.14 | 1.77 | 3.20 |
| | GR | 66.00 | -22.00 | -25.91 | -15.00 |
| | Fry | 1.33 | 8.76a | .40 | 11.77a |
| | Gates | 9.17 | 4.01 | -3.35 | 7.53 |
| LIPP | GA | 10.18 | | -0.91 | 5.72 |
| | GC | 9.36 | | 2.91 | 4.34 |
| | GR | 44.00 | | -3.91 | 7.00 |
| | Fry | 10.09 | | -8.36a | 3.01 |
| | Gates | 13.18 | | -7.36 | 3.52 |
| PWP | GA | 9.27 | | | 6.63 |
| | GC | 12.27 | | | 1.43 |
| | GR | 40.09 | | | 10.91 |
| | Fry | 1.73 | | | 11.37a |
| | Gates | 5.82 | | | 10.88b |
| i/t/a | GA | 15.90 | | | |
| | GC | 13.70 | | | |
| | GR | 51.00 | | | |
| | Fry | 13.10 | | | |
| | Gates | 16.70 | | | |

[1]Subtests:
GA - Gilmore Oral Reading Test Accuracy
GC - Gilmore Oral Reading Test Comprehension
GR - Gilmore Oral Reading Test Rate
Fry - Fry List of Phonetically Regular Words Oral Reading Test
Gates - Gates Word Pronunciation Test

[2]Unadjusted for pre-experimental differences

Positive differences favor program at top
Negative differences favor program at left

a. Significant at .01 level
b. Significant at .05 level

A summary of the findings from the previous three tables follows:

A. High IQ Third

1. On Gilmore Rate and Accuracy, i/t/a was significantly higher than SF and PWP. On Accuracy, LIPP was significantly ahead of SF and PWP.

2. There were no significant differences on the Gilmore Oral Reading Comprehension subtest among the four programs.

3. When reading words from the Gates and Fry lists, LIPP and i/t/a had significantly higher means than SF and PWP.

B. Middle IQ Third

1. There were no significant differences on the Gilmore Oral Reading Accuracy subtest among the four treatment variables.

2. SF had a significantly higher mean on Gilmore Oral Reading Comprehension than did LIPP.

3. SF and i/t/a had significantly higher means on the Gilmore Oral Reading Rate than LIPP.

4. On the Fry word list, LIPP and i/t/a had significantly higher means than PWP and SF. On the Gates word list, i/t/a was significantly higher than SF and PWP while LIPP was significantly higher than PWP.

C. Low IQ Third

1. There were no significant differences among means for any of the Gilmore subtests.

2. On the Fry list, LIPP and i/t/a had significantly higher means than SF and PWP.

3. I/t/a had a significant higher mean on the Gates list than PWP.

Teaching Characteristics and Pupil Reading Expectancy Levels

Table 12 reports the number of students who were one-half grade above their reading expectancy level at the end of April 1965.

Table 12
Silent Reading Achievement and Reading Expectancy[1]

| Program | Teacher | N[2] ½ grade above | 50% or more ½ grade above[3] |
|---|---|---|---|
| SF | A | 6 | |
| | B | 6 | |
| | C | 7 | |
| | D | 1 | |
| LIPP | E | 19 | x |
| | F | 13 | x |
| | G | 5 | |
| | H | 5 | |
| | I | 16 | x |
| PWP | J | 11 | x |
| | K | 1 | |
| | L | 3 | |
| | M | 3 | |
| | N | 0 | |
| i/t/a | O | 4 | |
| | P | 15 | x |
| | Q | 6 | |
| | R | 6 | |
| | S | 22 | x |

[1]Comparisons made by Bond and Tinker Reading Grade Score and Stanford Achievement Test, Primary I, Form X

[2]Number includes those who were one-half grade level or more above the Bond and Tinker Reading Grade Score on at least two of three reading subtests (Word Reading, Paragraph Meaning, and Word Study Skills - Stanford Achievement Test, Primary I, Form X, April 28, 1965).

[3]Rooms which had 50% or higher overachievement

It can be seen from the table that three out of five LIPP rooms had more than half of the students achieving one-half grade level or more above their reading expectancies; i/t/a had two out of five and PWP had one out of five. Thus, in six out of fifteen phonics classes, fifty percent of the pupils were one-half grade level or more above their reading expectancy levels.

The ratings for these six teachers were:

Table 13
Teaching Effectiveness and Pupil Achievement[1]

| Teacher[2] | Plan.[3] | Know.[3] | Com.[3] | Manage.[3] | Pers.[3] | Obj.[3] | Total[4] |
|---|---|---|---|---|---|---|---|
| LIPP E | 3.6 | 3.4 | 3.4 | 3.1 | 3.4 | 3.6 | 20.5 |
| LIPP F | 2.7 | 2.8 | 2.9 | 2.9 | 2.7 | 2.9 | 16.9 |
| LIPP I | 2.8 | 3.1 | 3.0 | 2.8 | 3.0 | 2.7 | 17.4 |
| PWP J | 3.0 | 2.8 | 2.8 | 2.5 | 2.9 | 2.8 | 16.8 |
| i/t/a P | 2.7 | 2.8 | 2.9 | 2.6 | 2.7 | 2.9 | 16.6 |
| i/t/a S | 4.0 | 3.9 | 3.9 | 3.6 | 4.0 | 4.0 | 23.4 |
| Mean | 3.13 | 3.13 | 3.15 | 2.92 | 3.12 | 3.15 | 18.60 |

[1]Teachers (six out of nineteen) who had fifty percent or more of students one-half grade level or more above reading expectancy.

[2]Teacher as identified in table 12.

[3]As defined by the Hayes Teacher Rating Scale on a 0 - 4 scale where 2 is average; and based on the average of twenty independent ratings per teacher by four different supervisors (See Appendices D and E).

[4]Total based on possible 0 - 24 point scale

The above table indicates that first grade teachers whose students usually learned to read above their predicted levels were rated as above-average teachers. At the same time it should be noted that the majority of the SF teachers were also rated as above-average teachers.

Teaching Characteristics and Positive Reading Attitude

The following table indicates the number of students for each teacher and independent treatment variable who had above average attitudes toward reading.

Table 14
Pupil Attitude[1]

| Program | Teacher[2] | N Positive Attitude[3] | 50% or more Positive Attitude[4] |
|---|---|---|---|
| SF | A | 9 | x |
| | B | 11 | x |
| | C | 5 | |
| | D | 3 | |
| LIPP | E | 15 | x |
| | F | 9 | x |
| | G | 6 | |
| | H | 9 | |
| | I | 11 | x |
| PWP | J | 16 | x |
| | K | 12 | x |
| | L | 10 | x |
| | M | 14 | |
| | N | 15 | x |
| i/t/a | O | 5 | |
| | P | 13 | x |
| | Q | 3 | |
| | R | 6 | |
| | S | 17 | x |

[1]As measured by San Diego County Inventory of Reading Attitude

[2]The letter designations are for the same teachers as in Tables 12 and 13

[3]Number in classroom having stanine score of six or better (raw score 19+) on San Diego County Inventory of Reading Attitude

[4]Indicates classes where 50% or more of students had above average attitudes (as defined above) toward reading.

In these eleven classrooms the teaching characteristics of the teachers were:

Table 15
Teaching Effectiveness and Pupil Attitude[1]

| Program | Teacher[2] | Teaching Effectiveness[3] Plan. | Know. | Comm. | Manage. | Pers. | Obj. | Total |
|---|---|---|---|---|---|---|---|---|
| SF | A | 3.3 | 3.5 | 3.5 | 3.6 | 3.8 | 3.6 | 21.3 |
| | B | 3.7 | 3.7 | 3.8 | 3.8 | 3.7 | 3.7 | 22.4 |
| LIPP | E | 3.6 | 3.4 | 3.4 | 3.1 | 3.4 | 3.6 | 20.4 |
| | F | 3.2 | 3.1 | 3.3 | 2.9 | 3.4 | 3.3 | 19.1 |
| | I | 2.8 | 3.1 | 3.0 | 2.8 | 3.0 | 2.7 | 17.3 |
| PWP | J | 3.0 | 2.8 | 2.8 | 2.5 | 2.9 | 2.8 | 16.7 |
| | K | 2.4 | 2.7 | 2.6 | 2.6 | 3.2 | 2.8 | 16.2 |
| | L | 3.1 | 3.1 | 3.0 | 2.8 | 3.4 | 3.2 | 18.4 |
| | N | 1.8 | 2.6 | 2.8 | 2.1 | 2.7 | 1.9 | 13.9 |
| i/t/a | P | 2.7 | 2.8 | 2.9 | 2.6 | 2.7 | 2.9 | 16.6 |
| | S | 4.0 | 3.9 | 3.6 | 4.0 | 4.0 | 4.0 | 23.3 |
| Mean | | 3.05 | 3.15 | 3.15 | 2.98 | 3.29 | 3.13 | 18.69 |

[1]Teaching effectiveness as measured by Hayes Teacher Rating Scale: pupil attitude measured by San Diego County Inventory of Reading Attitude.

[2]Letters are consistent with preceding table. Teachers in whose rooms fifty per cent or better of the students scoring above average (stanine six, raw score nineteen) on the San Diego County Inventory of Pupil Attitude.

[3]As measured by Hayes Rating Scale (See Appendices D and E).

The above table indicates that the classes where the majority of the pupils had above-average attitudes toward reading also had above-average teachers.

Home Influences

Educational level of parent (father), frequency of parental reading, and number of books and magazines in the home were used to evaluate the influence of the home on learning to read. The correlations between the foregoing factors and reading achievement were as follows:

Table 16
Home Influences and Achieving Correlations

| | Jan. W. R. | Jan. P. M. | Jan. W. S. S. | May W. R. | May P. M. | May W. S. S. | Gilmore Rate | Gilmore Acc. | Gilmore Comprehension | Fry List | Gates List |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ed. Level of Parent | .30 | .35 | .36 | .32 | .32 | .37 | .00 | .02 | .02 | .01 | .03 |
| Books in home | .27 | .26 | .27 | .33 | .32 | .28 | .10 | .12 | .08 | .14 | .11 |
| Parents Reading to Children | .02 | .10 | .04 | .09 | .12 | .14 | .01 | .00 | .00 | .05 | .03 |

The correlations between silent reading achievement and both educational level of parents and books in the home were somewhat low but statistically significant. The low correlations between achievement and frequency of parental reading to children may have resulted from asking the children for the latter information. If the reader is surprised at the very low correlations between home factors and oral achievement, a similar experience probably is in store when other correlations between oral achievement and factors such as I. Q., reading readiness, and silent reading achievement are examined in Appendix H.

### Other Findings on Correlations

Very high coefficients of correlation (.76 to .93) were obtained between results on the Gilmore Oral Test and both word lists. Also the Fry and the Gates Word List results correlated .93.

The highest correlation (.58) with teacher efficiency was number of books read by pupils. The comparatively short Lee Clark Reading Readiness Test correlated in a similar manner with silent reading achievement as did the longer readiness instruments used in this study. The San Diego Attitude Inventory results correlated quite low with most of the other variables. Except for the Detroit Word Recognition Test, the Pintner Cunningham I. Q. scores correlated between .49 and .78 with readiness and silent reading achievement results.

In this study the correlations between chronological age and the other variables were always below .14 and these correlations were not included in Appendix H.

## CONCLUSIONS AND IMPLICATIONS

Since the results were not always consistent, the following statements should be viewed as tentative, subject to collection and analysis of additional evidence, both replicative and longitudinal. The Scott, Foresman group read the most books, but the other three programs generally appeared to help children to higher silent achievement as measured by standardized tests. These silent achievement differences, which were adjusted statistically for pre-experimental differences among groups, normally favored i/t/a, Lippincott, and Phonics and Word Power to a greater degree in mid-year than toward the end of the year. This indicated the need for a longitudinal study to see if silent achievement differences in word reading, word study skills, and spelling will decrease in grade two as an eclectic, "whole word" basal approach introduces more phonics.

The limited progress in some of the areas of silent reading achievement in April compared to January for the i/t/a group suggested that at least those i/t/a pupils who had not made a transition to traditional orthography should have been administered a transliterated test in April. The i/t/a pupils had been taught with a different alphabet and it appears that these pupils should have been tested on what they had been taught since 26 percent had not transferred to traditional orthography.

The oral achievement results were not adjusted for pre-experimental differences among groups because of the very low correlations obtained between oral achievement and reading readiness, intelligence and socio-economic level as measured in this study. The Fry and Gates Word List results indicated significantly greater first grade word recognition achievement for i/t/a and Lippincott than did either Scott, Foresman; or Scott, Foresman augmented by Phonics and Word Power. Yet the Scott, Foresman group average was higher, although not significantly so, than the means of the other three programs for Gilmore Oral Comprehension. Reading programs which teach heavily concentrated sound-symbol relationships in first grade may give children greater power in reading lists of words, but this advantage may not be readily transferred in grade one to words in context in oral reading.

Based on correlation coefficients the Gilmore Oral, the Fry and the Gates Word Lists seemingly constituted a closely related factor which scarcely appeared connected with other variables such as intelligence, reading readiness, and silent reading achievement as measured in this study. The extremely high correlation of .93 between the Fry and Gates Word Lists suggested that children who do well with phonetically regular words also do well with phonetically irregular words and that those who do poorly with the one do poorly with the other.

In analyzing silent and oral achievement by ability levels, the results were not adjusted statistically to equate pre-experimental differences since the goal was to see which programs were best for different kinds of children. For the high I.Q. third, the i/t/a and Lippincott programs produced higher silent and oral achievement than did the other two approaches. For the average I.Q. third, i/t/a and Lippincott produced higher silent achievement than did the other two programs. Usually the i/t/a group was highest in oral achievement for the average I. Q. third. Generally, the i/t/a group was highest in both oral and silent achievement for the low I.Q. third.

The Phonics and Word Power group scored highest on the attitude toward reading inventory, yet this group read the fewest number of books. More accurate measuring instruments appear to be needed to assess pupil attitude toward reading.

Classes where the majority of the pupils had an above-average attitude toward reading were classes with teachers who were considered to be above-average by four different observers. Teachers whose students usually learned to read beyond their predicted levels were also teachers judged to be above average in planning, knowledge, communicative ability, classroom management, personality and attainment of objectives.

Further refinement of measuring instruments to evaluate the influence of home factors on reading achievement appears to be needed in view of the low correlations obtained. The number of books and magazines in the home seemed to have some positive influence on reading achievement. The educational level of parents was found to be the most significant home factor influencing reading achievement in this study. The above conclusions and implications should be viewed as tentative, subject to collection and analysis of additional evidence, both replicative and longitudinal.

Appendix A

Home Data

A. Pre-School Experience of the Child

| | Number of ½ days |
|---|---|
| 1. Kindergarten | _____ |
| 2. Nursery School | _____ |
| 3. Vacation Bible School | _____ |
| 4. Other | _____ |
| a. | _____ |
| b. | _____ |
| c. | _____ |

B. Educational Level of the Father

| | Check Highest Level Attained |
|---|---|
| 1. Less than 7 years of school | _____ |
| 2. Junior High School only | _____ |
| 3. Partial High School - Completed Grade 10 or 11 | _____ |
| 4. High School Graduate | _____ |
| 5. Partial College Training | _____ |
| 6. Standard College or University | _____ |
| 7. Graduate Professional Training | _____ |

C. Books and Magazines in Evidence

0. Unavailable
1. None
2. 1 - 10
3. 11 - 20
4. 21 - 30
5. 31 or more

Appendix B

Grade I Pre-Experimental Variables[1]

| Variable | SF Mean | LIPP Mean | PWP Mean | i/t/a Mean | Significance Level | S.D. for Total |
|---|---|---|---|---|---|---|
| Chronological Age (In Months) | 75.55 | 75.05 | 75.02 | 75.86 | n.s. | 4.44 |
| ½ Days of Kindergarten | 0.76 | 0.98 | 0.64 | 1.68 | .01 | 1.28 |
| Murphy-Durrell Phonemes | 16.22 | 14.47 | 13.98 | 19.92 | .01 | 12.77 |
| Murphy-Durrell Letter Names | 24.93 | 20.30 | 19.92 | 27.81 | .01 | 15.57 |
| Murphy-Durrell Learning Rate | 7.66 | 7.79 | 7.11 | 7.58 | n.s. | 3.97 |
| Thurstone Pattern Copying | 11.99 | 5.63 | 5.63 | 5.28 | .01 | 5.64 |
| Thurstone Identical Forms | 15.13 | 10.36 | 10.38 | 12.06 | .01 | 7.03 |
| Metro Word Meaning | 7.43 | 6.34 | 6.50 | 8.18 | .01 | 2.74 |
| Metro Listening | 7.48 | 7.52 | 7.79 | 8.76 | .05 | 2.69 |
| Metro Matching | 5.61 | 4.30 | 4.45 | 5.86 | .05 | 3.99 |
| Metro Numbers | 11.63 | 9.38 | 8.68 | 11.13 | .01 | 4.62 |
| Metro Copying | 5.60 | 2.40 | 2.97 | 5.02 | .01 | 3.25 |
| Metro Alphabet | 7.90 | 6.65 | 6.03 | 8.56 | .01 | 4.65 |
| Metro Total | 46.00 | 36.55 | 36.41 | 47.65 | .001 | 16.95 |
| I. Q. Raw Score[2] | 34.24 | 32.14 | 30.84 | 33.19 | n.s. | 9.56 |
| Detroit Word Recognition | 0.81 | 1.10 | 1.08 | 0.96 | n.s. | 1.60 |
| Educational Level of Father[3] | 3.30 | 2.98 | 3.28 | 3.43 | n.s. | 1.24 |
| Number of Books in Home | 2.51 | 2.32 | 2.32 | 2.39 | n.s. | 1.52 |
| Frequency of Parental Reading | 1.19 | 0.81 | 1.34 | 0.99 | .05 | 1.16 |
| Teacher Effectiveness[2] | 17.97 | 17.54 | 14.43 | 17.02 | n.s. | 3.49 |
| Teacher Self Evaluation | 2.82 | 2.17 | 2.52 | 1.76 | .01 | 0.62 |
| Lee Clark | 46.27 | 41.72 | 43.10 | 47.21 | .05 | 12.45 |

[1]All tests were administered September 1 - 15, 1964. Raw score means are shown above for tests and n.s. equals not significant. The column "significance level" refers to differences (collectively) among means for the four groups.

Tests: Murphy-Durrell Diagnostic Reading Readiness Test
Thurstone Pattern Copy and Identical Forms Test
Metropolitan Reading Readiness Test
Pintner-Cunningham Primary Test
Detroit Word Recognition Test
Lee-Clark Reading Readiness Test

[2]The differences between means for SF and PWP for both I.Q. and Teacher Effectiveness were significant at the .05 level.

[3]The differences between means for LIPP and i/t/a for educational level of father were significant at the .05 level.

Appendix C

Teacher Log

School _____ Teacher _____ Treatment_____ Date_____

I. Objectives of lesson (List specific purposes of lesson - what you expect pupils to accomplish - phonic elements, word attack, etc.).
   1.
   2.
   3.

II. Instructional Time
   A. Group instruction _____minutes
   B. Small group instruction (AM & PM)
      1. Group I _____minutes
      2. Group II _____minutes
      3. Group III _____minutes
   C. Total Time for Reading _____ minutes (AM & PM)
   D. Supportive Activities
      1. Total Time _____ minutes (AM & PM)

III. Materials (List all aids - blackboards, motion pictures, slides, filmstrips, equipment, books, etc.).
   A.
   B.
   C.

IV. Correlation of lesson with other curriculum areas (writing, spelling, arithmetic, etc.).
   A.
   B.
   C.

V. Evaluation of daily lesson in terms of teacher performance.
   A. Check One

| Poor | Below Average | Average | Above Average | Excellent |
|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 |

   B. How did you arrive at the evaluation marked above?

   C. When used, please staple a copy of seat work, tests, etc. to this sheet.

VI. Visitors present
   A. Name_____
   B. Length of visit_____
   C. Comments_____

Appendix D

Hayes Teacher Rating Scale

Observer's Name_____ School _____

Teacher Being Observed_____ Date of Observation _____

Reading Method _____ Observation No. _____

Directions: Your observation of each lesson should determine whether it is above average, average or below average. In left hand column, enter (M) for adequate, (+ or -) for deviations above and below. For example: for any one of the four sub points under category A. Planning, your observation can be M. M+ or M-. Make appropriate comments on the right if a statement under each of the 6 categories does not appear on the form. After the lesson, circle the appropriate number under Rating of each of the 6 categories to indicate your overall rating of that category (a rating of 2 represents an average performance).

After you have filled out this Performance Method sheet, you are to send it to the School Psychologist, Dr. Delancy, at the Administration Building and mark it Confidential Material.

Appendix D (Continued)

Hayes Teacher Rating Scale

| | RATING | COMMENTS | |
|---|---|---|---|
| | 0 1 2 3 4 | STRENGTHS | WEAKNESSES |
| **A. PLANNING** | | | |
| _____ 1. Motivated students | | | |
| _____ 2. Adequate student performance time | | | |
| _____ 3. Suited amount of material to time | | | |
| _____ 4. Established closure | | | |
| **B. KNOWLEDGE** | | | |
| | 0 1 2 3 4 | | |
| _____ 1. Explanations were correct | | | |
| _____ 2. Answered student questions adequately | | | |
| _____ 3. Student supervision indicated thorough knowledge | | | |
| **C. COMMUNICATION TO STUDENTS** | | | |
| | 0 1 2 3 4 | | |
| _____ 1. Emphasized main points | | | |
| _____ 2. Provided good examples | | | |
| _____ 3. Used standard English | | | |
| _____ 4. Varied speech patterns (rate and volume) | | | |
| _____ 5. Effectively used training aids | | | |
| **D. CLASSROOM MANAGEMENT** | | | |
| | 0 1 2 3 4 | | |
| _____ 1. Effectively arranged physical facilities | | | |
| _____ 2. Channeled student activity toward objectives | | | |
| _____ 3. Used supervision for additional teaching | | | |
| _____ 4. Included an evaluation step | | | |
| **E. TEACHING PERSONALITY** | | | |
| | 0 1 2 3 4 | | |
| _____ 1. Interested in students | | | |
| _____ 2. Interested in subject | | | |
| _____ 3. Attitude which fostered cooperation | | | |
| _____ 4. Confident and at ease | | | |
| **F. ATTAINMENT OF OBJECTIVES** | | | |
| | 0 1 2 3 4 | | |

Appendix E

Hayes Teacher Rating Scale
Rating Range Categories

| Rating Range | Comments |
|---|---|
| **Planning** | |
| 3.0 - 4.0 | Superior planning of all aspects |
| 2.0 - 2.9 | Above average planning |
| 1.0 - 1.9 | About average in planning lessons |
| 0 - .9 | Definitely below average in planning lessons |
| **Knowledge** | |
| 3.0 - 4.0 | Superior knowledge of subject |
| 2.0 - 2.9 | Above average knowledge of subject |
| 1.0 - 1.9 | About average knowledge of subject |
| 0 - .9 | Definitely below average knowledge of the subject |
| **Communication** | |
| 3.0 - 4.0 | Superior communication of ideas |
| 2.0 - 2.9 | Above average communication of ideas |
| 1.0 - 1.9 | About average communication of ideas |
| 0 - .9 | Definitely below average |
| **Management** | |
| 3.0 - 4.0 | Superior guidance, supervision and evaluation of students toward lesson objectives |
| 2.0 - 2.9 | Above average supervision |
| 1.0 - 1.9 | About average supervision |
| 0 - .9 | Poor |
| **Personality** | |
| 3.0 - 4.0 | Superior attitude which completely gained pupil cooperation |
| 2.0 - 2.9 | Above average personality |
| 1.0 - 1.9 | About average |
| 0 - .9 | Poor |
| **Objectives** | |
| 3.0 - 4.0 | Superior teacher-pupil achievement |
| 2.0 - 2.9 | Above average teacher-pupil achievement |
| 1.0 - 1.9 | About average teacher-pupil achievement |
| 0 - .9 | Definitely below average teacher-pupil achievement |

## Appendix F

## Frequency of Adult Reading to Children

Teacher _____ Method _____

Please (x)

| Child's Name | None | 1-2 per week | 3-4 per week | 5-6 per week | 7-8 per week | 9-10 per week | 11 or more |
|---|---|---|---|---|---|---|---|
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Note: Please list names in alphabetical order, boys first, then girls.

## Appendix G

### Class Roster for Recording Classroom Recreational Reading

Instructions for using this roster

1. List student's name and total number of books read commencing 2/1/65
2. Save slips with child's name, name of book, etc.

| Student's Name | Total # of Books Read | Student's Name | Total # of Books Read |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
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| | | | |
| | | | |

Slip used to record books as they were read:

Date _____

Name of Book _____

Number of Pages _____

Child's Name _____

## Appendix H - Correlation Matrix

1. DM Phonemes
2. DM Letter Names
3. DM Rate
4. Thurstone Patterns
5. Thurstone Identical Forms
6. Metro Word Meaning
7. Metro Listening
8. Metro Matching
9. Metro Numbers
10. Metro Copying
11. Metro Alphabet
12. Metro Total
13. I. Q.
14. Detroit Word Recognition
15. Educational Level of Parents
16. Books in home
17. Parents reading to children
18. Jan. Word Reading
19. Jan. Par. Meaning
20. Jan. Vocab.
21. Jan. Spelling
22. Jan. Word Study Skills
23. Jan. Math
24. Teacher Efficiency
25. Books read by pupils
26. Lee Clark Readiness
27. April Word Reading
28. April Paragraph Meaning
29. April Vocab.
30. April Spelling
31. April Word Study Skills
32. April Math
33. Gilmore Rate
34. Gilmore Accuracy
35. Gilmore Comprehension
36. Fry Word List
37. Gates Word List
38. Pupil Attitude

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 60 | 45 | 31 | 38 | 46 | 51 | 45 | 56 | 42 | 58 | 65 | 55 | 31 | 37 | 19 | 06 | 53 | 50 | 53 | 45 | 53 | 57 | 31 | 33 | 50 | 53 | 49 | 54 | 44 | 58 | 52 | 05 | 10 | 02 | 12 | 07 | 21 |
| 2 | 60 | | 51 | 36 | 48 | 51 | 50 | 57 | 71 | 55 | 91 | 84 | 63 | 32 | 30 | 30 | 15 | 56 | 55 | 57 | 57 | 61 | 67 | 21 | 35 | 66 | 62 | 63 | 59 | 57 | 61 | 63 | 15 | 18 | 12 | 16 | 14 | 18 |
| 3 | 45 | 51 | | 34 | 39 | 31 | 34 | 38 | 47 | 33 | 49 | 53 | 49 | 31 | 17 | 12 | 05 | 34 | 33 | 34 | 34 | 34 | 46 | 12 | 22 | 46 | 42 | 42 | 38 | 41 | 41 | 46 | 11 | 13 | 08 | 13 | 11 | 21 |
| 4 | 31 | 36 | 34 | | 30 | 30 | 26 | 38 | 42 | 53 | 32 | 48 | 49 | 08 | 19 | 16 | 05 | 12 | 16 | 38 | 09 | 16 | 33 | 31 | 31 | 37 | 28 | 31 | 34 | 24 | 32 | 42 | 10 | 15 | 12 | 07 | 09 | 08 |
| 5 | 38 | 48 | 39 | 30 | | 41 | 39 | 45 | 47 | 40 | 47 | 57 | 58 | 16 | 22 | 25 | 13 | 33 | 32 | 43 | 34 | 41 | 43 | 10 | 24 | 57 | 44 | 43 | 44 | 43 | 44 | 19 | 05 | 11 | 04 | 04 | 04 | 15 |
| 6 | 46 | 51 | 31 | 30 | 41 | | 46 | 47 | 53 | 41 | 49 | 71 | 60 | 19 | 35 | 25 | 18 | 45 | 39 | 60 | 37 | 47 | 50 | 27 | 29 | 49 | 46 | 42 | 56 | 42 | 46 | 51 | 10 | 12 | 08 | 13 | 10 | 10 |
| 7 | 51 | 50 | 34 | 26 | 38 | 46 | | 44 | 47 | 33 | 47 | 66 | 55 | 17 | 33 | 22 | 10 | 41 | 42 | 51 | 38 | 48 | 51 | 23 | 26 | 50 | 43 | 43 | 54 | 40 | 43 | 50 | 03 | 06 | 02 | 07 | 05 | 09 |
| 8 | 45 | 57 | 38 | 38 | 45 | 47 | 44 | | 57 | 48 | 53 | 77 | 64 | 17 | 25 | 23 | 13 | 40 | 40 | 57 | 41 | 44 | 55 | 10 | 24 | 59 | 44 | 44 | 55 | 43 | 45 | 58 | 08 | 12 | 06 | 07 | 07 | 10 |
| 9 | 56 | 71 | 47 | 42 | 47 | 53 | 47 | 57 | | 52 | 68 | 85 | 66 | 18 | 32 | 22 | 14 | 46 | 44 | 59 | 44 | 54 | 72 | 25 | 38 | 63 | 56 | 55 | 59 | 53 | 59 | 71 | 14 | 16 | 10 | 15 | 13 | 15 |
| 10 | 42 | 55 | 33 | 52 | 40 | 41 | 33 | 48 | 52 | | 52 | 70 | 50 | 13 | 24 | 29 | 11 | 38 | 38 | 49 | 38 | 43 | 49 | 28 | 37 | 52 | 42 | 46 | 45 | 43 | 47 | 51 | 12 | 17 | 13 | 11 | 12 | 13 |
| 11 | 58 | 91 | 49 | 32 | 47 | 49 | 47 | 53 | 68 | 52 | | 84 | 62 | 33 | 24 | 28 | 17 | 53 | 53 | 54 | 53 | 58 | 63 | 23 | 35 | 61 | 60 | 60 | 56 | 53 | 58 | 59 | 14 | 18 | 11 | 16 | 14 | 19 |
| 12 | 65 | 84 | 53 | 48 | 57 | 71 | 66 | 77 | 85 | 71 | 84 | | 78 | 27 | 37 | 32 | 18 | 58 | 56 | 71 | 56 | 65 | 75 | 28 | 41 | 74 | 64 | 64 | 71 | 60 | 66 | 75 | 13 | 18 | 11 | 15 | 13 | 18 |
| 13 | 55 | 63 | 49 | 49 | 58 | 60 | 55 | 64 | 66 | 50 | 61 | 78 | | 24 | 33 | 26 | 13 | 49 | 52 | 66 | 49 | 55 | 64 | 31 | 39 | 67 | 62 | 63 | 69 | 58 | 63 | 71 | 13 | 17 | 12 | 14 | 13 | 22 |
| 14 | 31 | 33 | 31 | 08 | 16 | 19 | 17 | 17 | 18 | 13 | 32 | 27 | 24 | | 11 | 09 | 07 | 24 | 35 | 21 | 22 | 16 | 19 | 08 | 11 | 22 | 25 | 25 | 24 | 16 | 24 | 21 | -01 | -01 | -01 | -01 | 00 | 15 |
| 15 | 37 | 29 | 17 | 18 | 21 | 35 | 33 | 25 | 32 | 24 | 24 | 38 | 33 | 11 | | 28 | 20 | 30 | 35 | 35 | 31 | 36 | 34 | 27 | 27 | 32 | 32 | 37 | 38 | 30 | 36 | 35 | 00 | 02 | -02 | 01 | -03 | 11 |
| 16 | 19 | 30 | 12 | 16 | 25 | 25 | 22 | 23 | 22 | 29 | 28 | 32 | 26 | 09 | 28 | | 19 | 27 | 26 | 30 | 31 | 27 | 29 | 06 | 17 | 29 | 33 | 32 | 28 | 34 | 28 | 28 | 10 | 12 | 08 | 14 | 11 | 05 |
| 17 | 06 | 15 | 05 | 05 | 12 | 18 | 10 | 13 | 14 | 11 | 17 | 18 | 13 | 07 | 20 | 19 | | 02 | 10 | 13 | 04 | 04 | 11 | -03 | 15 | 19 | 09 | 12 | 10 | 16 | 14 | 15 | 01 | 00 | 00 | -05 | -03 | 10 |
| 18 | 53 | 56 | 34 | 12 | 33 | 45 | 41 | 40 | 46 | 38 | 53 | 58 | 49 | 24 | 30 | 27 | 02 | | 76 | 59 | 85 | 80 | 59 | 35 | 35 | 47 | 78 | 71 | 58 | 67 | 70 | 58 | 16 | 20 | 12 | 32 | 23 | 21 |
| 19 | 50 | 55 | 33 | 16 | 32 | 39 | 42 | 40 | 44 | 38 | 53 | 56 | 52 | 35 | 35 | 26 | 10 | 76 | | 58 | 70 | 64 | 56 | 39 | 42 | 46 | 69 | 71 | 55 | 54 | 61 | 51 | 15 | 21 | 12 | 28 | 20 | 30 |
| 20 | 53 | 57 | 34 | 40 | 43 | 60 | 51 | 57 | 59 | 49 | 54 | 71 | 66 | 21 | 35 | 30 | 13 | 59 | 58 | | 53 | 62 | 66 | 33 | 45 | 61 | 61 | 64 | 72 | 56 | 64 | 69 | 15 | 19 | 13 | 17 | 13 | 22 |
| 21 | 45 | 57 | 34 | 09 | 34 | 37 | 38 | 41 | 44 | 38 | 53 | 56 | 49 | 22 | 31 | 31 | 04 | 85 | 71 | 53 | | 82 | 59 | 21 | 29 | 46 | 78 | 72 | 56 | 76 | 73 | 56 | 19 | 22 | 14 | 35 | 27 | 25 |
| 22 | 53 | 61 | 34 | 16 | 41 | 47 | 48 | 44 | 54 | 43 | 58 | 65 | 55 | 16 | 36 | 27 | 04 | 80 | 64 | 62 | 82 | | 64 | 29 | 40 | 54 | 76 | 71 | 63 | 70 | 77 | 62 | 17 | 23 | 14 | 31 | 23 | 22 |
| 23 | 57 | 67 | 46 | 33 | 43 | 51 | 51 | 55 | 72 | 49 | 62 | 75 | 64 | 19 | 34 | 29 | 11 | 60 | 56 | 66 | 59 | 64 | | 30 | 37 | 64 | 64 | 65 | 69 | 60 | 66 | 83 | 17 | 20 | 14 | 19 | 17 | 21 |
| 24 | 31 | 21 | 12 | 32 | 10 | 27 | 23 | 10 | 25 | 28 | 23 | 28 | 31 | 08 | 27 | 06 | -03 | 36 | 39 | 33 | 20 | 30 | 30 | | 58 | 20 | 36 | 41 | 39 | 21 | 35 | 38 | 13 | 12 | 11 | 12 | 12 | 04 |
| 25 | 33 | 34 | 22 | 31 | 24 | 29 | 26 | 24 | 38 | 37 | 35 | 41 | 39 | 11 | 27 | 17 | 15 | 35 | 42 | 45 | 29 | 41 | 37 | 58 | | 37 | 47 | 55 | 44 | 42 | 49 | 43 | 15 | 15 | 10 | 10 | 11 | 17 |
| 26 | 50 | 66 | 46 | 37 | 57 | 49 | 50 | 59 | 63 | 52 | 61 | 74 | 67 | 22 | 32 | 29 | 19 | 47 | 46 | 61 | 46 | 54 | 64 | 20 | 37 | | 54 | 55 | 57 | 52 | 58 | 64 | 15 | 19 | 12 | 15 | 14 | 16 |
| 27 | 53 | 62 | 42 | 28 | 43 | 46 | 43 | 44 | 56 | 42 | 60 | 64 | 62 | 25 | 32 | 33 | 09 | 78 | 69 | 61 | 78 | 76 | 64 | 36 | 47 | 54 | | 84 | 66 | 82 | 85 | 68 | 19 | 24 | 13 | 33 | 26 | 28 |
| 28 | 49 | 63 | 42 | 31 | 43 | 42 | 43 | 44 | 55 | 46 | 60 | 64 | 63 | 25 | 37 | 32 | 12 | 71 | 71 | 64 | 72 | 71 | 64 | 40 | 55 | 55 | 84 | | 68 | 77 | 82 | 69 | 24 | 27 | 17 | 29 | 26 | 36 |
| 29 | 54 | 59 | 38 | 34 | 44 | 56 | 54 | 55 | 59 | 45 | 56 | 71 | 69 | 24 | 38 | 29 | 10 | 58 | 55 | 72 | 56 | 63 | 68 | 39 | 45 | 57 | 66 | 68 | | 60 | 69 | 73 | 18 | 24 | 18 | 21 | 21 | 19 |
| 30 | 44 | 57 | 41 | 24 | 42 | 42 | 40 | 43 | 53 | 43 | 53 | 60 | 58 | 16 | 30 | 34 | 16 | 67 | 54 | 56 | 76 | 70 | 60 | 21 | 42 | 52 | 82 | 77 | 60 | | 81 | 66 | 18 | 23 | 14 | 26 | 23 | 24 |
| 31 | 58 | 61 | 41 | 32 | 44 | 46 | 43 | 45 | 59 | 47 | 58 | 66 | 63 | 24 | 36 | 28 | 14 | 70 | 61 | 64 | 73 | 77 | 66 | 35 | 49 | 58 | 85 | 82 | 69 | 81 | | 70 | 21 | 26 | 16 | 28 | 24 | 30 |
| 32 | 52 | 63 | 46 | 42 | 49 | 51 | 50 | 58 | 71 | 51 | 59 | 75 | 71 | 21 | 36 | 28 | 15 | 58 | 51 | 69 | 56 | 63 | 84 | 38 | 43 | 64 | 68 | 69 | 73 | 66 | 70 | | 19 | 23 | 15 | 20 | 20 | 23 |
| 33 | 05 | 15 | 11 | 10 | 05 | 10 | 03 | 09 | 14 | 12 | 14 | 14 | 13 | -01 | 00 | 10 | -01 | 16 | 15 | 15 | 19 | 18 | 17 | 13 | 15 | 15 | 19 | 24 | 18 | 18 | 21 | 19 | | 92 | 89 | 81 | 91 | 08 |
| 34 | 10 | 18 | 13 | 15 | 11 | 11 | 06 | 12 | 16 | 17 | 18 | 18 | 17 | 01 | 01 | 13 | 00 | 20 | 21 | 19 | 22 | 23 | 20 | 13 | 15 | 19 | 24 | 27 | 24 | 23 | 26 | 23 | 92 | | 92 | 86 | 93 | 11 |
| 35 | 02 | 12 | 08 | 12 | 04 | 08 | 02 | 06 | 10 | 13 | 11 | 11 | 12 | -01 | -02 | 08 | 00 | 12 | 12 | 13 | 14 | 14 | 14 | 11 | 10 | 12 | 13 | 18 | 18 | 14 | 16 | 15 | 89 | 92 | | 76 | 87 | 06 |
| 36 | 12 | 16 | 13 | 07 | 04 | 13 | 07 | 07 | 15 | 11 | 16 | 15 | 14 | -01 | 01 | 14 | -05 | 31 | 28 | 17 | 35 | 31 | 19 | 11 | 10 | 15 | 33 | 29 | 21 | 26 | 28 | 20 | 81 | 86 | 76 | | 93 | 11 |
| 37 | 08 | 14 | 11 | 09 | 04 | 10 | 05 | 07 | 13 | 12 | 14 | 13 | 13 | 00 | -02 | 10 | -03 | 23 | 20 | 13 | 27 | 23 | 17 | 17 | 11 | 14 | 26 | 26 | 21 | 23 | 24 | 20 | 91 | 93 | 87 | 93 | | 09 |
| 38 | 21 | 18 | 21 | 08 | 15 | 10 | 09 | 10 | 16 | 13 | 20 | 18 | 22 | 15 | 11 | 05 | 10 | 21 | 30 | 22 | 25 | 22 | 21 | 04 | 17 | 16 | 29 | 36 | 19 | 24 | 30 | 23 | 08 | 11 | 06 | 11 | 09 | |

## Appendix I

### Adjusted Raw Score Means[a] Stanford Achievement Test Primary I, Form W and X

| January Subtests | SF Means (N=67) | LIPP Means (N=99) | PWP Means (N=103) | i/t/a Means (N=96) | Standard Deviations For Total |
|---|---|---|---|---|---|
| Word Reading | 11.3581 | 17.5504 | 14.6240 | 23.0391 | 9.07 |
| Paragraph Meaning | 7.8521 | 15.6518 | 12.2871 | 14.3255 | 8.73 |
| Vocabulary | 19.1259 | 19.2251 | 20.3769 | 19.0354 | 6.27 |
| Spelling | 2.7286 | 7.8937 | 6.1490 | 11.5500[b] | 6.36 |
| Word Study Skills | 27.1291 | 34.5142 | 32.2824 | 40.2627 | 11.86 |
| Arithmetic | 26.6084 | 25.2708 | 28.4305 | 27.2166 | 12.88 |
| **April Subtests[c]** | | | | | |
| Word Reading | 18.6458 | 25.2286 | 21.8678 | 23.6986 | 8.63 |
| Paragraph Meaning | 19.8031 | 23.3171 | 23.0196 | 21.0131 | 10.80 |
| Vocabulary | 21.6692 | 22.2106 | 20.9004 | 21.2569 | 6.38 |
| Spelling | 9.9385 | 12.4933 | 12.6296 | 13.9907[b] | 7.03 |
| Word Study Skills | 35.1084 | 38.9424 | 38.6601 | 38.6329 | 11.22 |
| Arithmetic | 36.6734 | 34.4511 | 37.9595 | 36.5577 | 15.11 |

[a]Adjusted for Murphy-Durrell Phonemes, Murphy-Durrell Letter Names, Metropolitan Total Reading Readiness, Pintner-Cunningham I.Q., Parental Education Level, and Teacher Efficiency Ratings.

[b]Counting words correct if spelled in either traditional orthography or i/t/a.

[c]In April the i/t/a group took the same non-transliterated test as did the other groups.

## Appendix J

### 1964-65 Adjusted Mean Grade Equivalent Scores[1]

#### Stanford Word Reading

| | SF | LIPP | PWP | i/t/a |
|---|---|---|---|---|
| January 26, 1965* | 1.3 | 1.7 | 1.5 | 1.9 |
| May 1, 1965** | 1.7 | 2.0 | 1.8 | 1.9 |

#### Stanford Paragraph Meaning

| | | | | |
|---|---|---|---|---|
| January 26, 1965* | 1.4 | 1.6 | 1.6 | 1.6 |
| May 1, 1965** | 1.7 | 1.8 | 1.8 | 1.8 |

#### Stanford Vocabulary

| | | | | |
|---|---|---|---|---|
| January 26, 1965* | 1.6 | 1.6 | 1.7 | 1.6 |
| May 1, 1965** | 2.1 | 2.1 | 2.0 | 2.0 |

#### Stanford Spelling

| | | | | |
|---|---|---|---|---|
| January 26, 1965* | 1.3 | 1.7 | 1.6 | 2.0 |
| May 1, 1965** | 1.7 | 1.9 | 2.0 | 1.7*** |

#### Stanford Word Study Skills

| | | | | |
|---|---|---|---|---|
| January 26, 1965* | 1.4 | 1.8 | 1.6 | 2.1 |
| May 1, 1965** | 1.8 | 2.0 | 2.0 | 2.0 |

#### Stanford Arithmetic

| | | | | |
|---|---|---|---|---|
| January 26, 1965* | 1.6 | 1.5 | 1.6 | 1.6 |
| May 1, 1965** | 1.8 | 1.7 | 1.8 | 1.8 |

[1]Stanford Achievement Test, Primary I Battery

*Form W which was transliterated into i/t/a for i/t/a group.

**Form X which was not transliterated.

***Counting words correct in traditional orthography only. Counting words correct in i/t/a, the 1.7 would become a 2.1 grade equivalent mean for i/t/a spelling.

## Appendix K

## New Castle Reading Pilot Study

### Grade I Pre-Experimental Variables

| | Scott, Foresman | Lippincott | Difference |
|---|---|---|---|
| N | 75 | 73 | 2 |
| I. Q. | 103.8 | 103.7 | 0.1 |
| MA (September, 1963) | 6-5.4 | 6-7.6 | 0-2.2 |
| Lee Clark Readiness[v] | 43.16 | 43.51 | 0.35 |

### Metropolitan Word Knowledge Grade Equivalent Means

| | Scott, Foresman | Lippincott | Difference |
|---|---|---|---|
| February 19, 1964[w] | 1.7 | 1.9 | 0.2 |
| May 12, 1964[w] | 1.9 | 2.7 | 0.8 |
| May 19, 1964[x] | 2.1 | 2.8 | 0.7 |
| December 22, 1964[x] | 3.1 | 3.9 | 0.8 |
| May 26, 1965[y] | 3.6 | 3.9 | 0.3 |

### Metropolitan Word Discrimination Grade Equivalent Means

| | Scott, Foresman | Lippincott | Difference |
|---|---|---|---|
| February 19, 1964[w] | 1.7 | 2.4 | 0.6 |
| May 12, 1964[w] | 2.1 | 2.6 | 0.5 |
| May 19, 1964[x] | 2.3 | 3.1 | 0.8 |
| December 22, 1964[x] | 3.2 | 3.9 | 0.7 |
| May 26, 1965[y] | 3.9 | 4.3 | 0.4 |

v - Raw Score Means, May, 1963

w - Primary I Battery, Form B in February, Form C in May

x - Primary II Battery, Form C in May, Form A in December

y - Elementary Battery, Form C

Appendix K (Continued)

New Castle Reading Pilot Study

Metropolitan Reading Grade Equivalent Means

| | Scott, Foresman | Lippincott | Difference |
|---|---|---|---|
| February 19, 1964[w] | 1.6 | 1.9 | 0.3 |
| May 12, 1964[w] | 2.0 | 2.7 | 0.7 |
| May 19, 1964[x] | 2.1 | 2.6 | 0.5 |
| December 22, 196[x] | 3.0 | 3.3 | 0.3 |
| May 26, 1965[y] | 3.6 | 3.9 | 0.3 |

Metropolitan Spelling Grade Equivalent Means

| | Scott, Foresman | Lippincott | Difference |
|---|---|---|---|
| December 22, 1964[x] | 2.7 | 3.5 | 0.8 |
| May 26, 1965[y] | 4.4 | 4.8 | 0.4 |

Grade II Pre-Experimental Variables

| | Scott, Foresman | Lippincott | Difference |
|---|---|---|---|
| N | 62 | 55 | 7 |
| I. Q. | 106.32 | 105.62 | 0.7 |
| MA (September, 1963) | 6-5 | 6-7 | 0-2 |
| Lee Clark Readiness | 45.19 | 44.56 | 0.63 |

NOTE: Class means were used as the basic observations for statistical analysis since pupils were not randomly assigned to treatments. With this restriction the differences in means were not statistically significant.

## Appendix L

### Fry Phonetically Regular Words Oral Reading Test

Child's Name_____ Date_____

School_____ Room _____ Code Number_____

Examiner _____ Number of Words read correctly_____

| | |
|---|---|
| 1. nap | 16. walk |
| 2. pen | 17. haul |
| 3. hid | 18. jaw |
| 4. job | 19. soil |
| 5. rug | 20. joy |
| 6. shade | 21. frown |
| 7. drive | 22. trout |
| 8. joke | 23. term |
| 9. mule | 24. curl |
| 10. plain | 25. birch |
| 11. hay | 26. rare |
| 12. keen | 27. star |
| 13. least | 28. porch |
| 14. loan | 29. smooth |
| 15. show | 30. shook |

Directions: Have pupil read words from one copy while examiner makes another copy. Do not give pupil a second chance but accept immediate self-correction. Let every student try the whole first column. If he gets two words correct from word number six on, let him try the whole second column.

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